

Claims

[c1] What is claimed is:

1. A video decoding unit for decoding a predetermined plurality of different video object plane (VOP) types, the decoding unit comprising:
at least one decoding module capable of decoding a predetermined signal in each of the predetermined plurality of different VOP types and outputting a decoded result specifically corresponding to the VOP type currently being decoded.

[c2] 2. The video decoding unit of claim 1 wherein the decoded result is based upon a predetermined lookup table specifically corresponding to the VOP type currently being decoded.

[c3] 3. The video decoding unit of claim 2 wherein the predetermined lookup table specifically corresponding to the VOP type currently being decoded is selected from a plurality of predetermined lookup tables specifically and respectively corresponding to the predetermined plurality of VOP types.

[c4] 4. The video decoding unit of claim 3 further comprising

a switching circuit connected to the decoding module for determining which of the predetermined plurality of VOP types the decoding module is to decode.

- [c5] 5. The video decoding unit of claim 4 further comprising a multiplexer having an input connected to an output of the decoding module for selectively outputting the coded result to a memory for further processing.
- [c6] 6. The video decoding unit of claim 5 wherein the output of the multiplexer is determined by the switching circuit.
- [c7] 7. The video decoding unit of claim 4 wherein the decoding module comprises a VOP type indicating flag.
- [c8] 8. The video decoding unit of claim 7 wherein the VOP type indicating flag is set by the switching circuit.
- [c9] 9. The video decoding unit of claim 4 wherein the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module.
- [c10] 10. A device comprising:
 - a memory;
 - a plurality of video decoding modules, each video decoding module capable of decoding a predetermined signal in a Data-partitioned intra video object plane

(DP-I VOP) and capable of decoding the predetermined signal in a Data partitioned predicted video object plane (DP-P VOP) and outputting a decoded result according to the type of VOP;
a multiplexer having inputs respectively connected to outputs of the plurality of video decoding modules and having an output connected to the memory; and
a switching circuit connected to the plurality of video decoding modules for indicating to each decoding module which type of VOP is to be decoded and connected to the multiplexer for controlling which decoded result is transmitted to the memory.

- [c11] 11. The device of claim 10 wherein the decoded result is determined by data specifically corresponding to the VOP type currently being decoded.
- [c12] 12. The device of claim 11 wherein the data specifically corresponding to the VOP type currently being decoded is selected from a predetermined lookup table corresponding to a DP-I VOP or is selected from a predetermined lookup table corresponding to a DP-P VOP.
- [c13] 13. The device of claim 12 wherein the predetermined lookup table specifically corresponding to the VOP type the decoding module is to decode is transmitted from the switching circuit to the decoding module.

- [c14] 14. The device of claim 10 wherein each decoding module comprises a VOP type indicating flag.
- [c15] 15. The device of claim 13 wherein the VOP type indicating flag is set by the switching circuit.
- [c16] 16. A method for decoding a plurality of different types of MPEG video object planes (VOP), the method comprising:
 - providing a decoding module capable of decoding a pre-determined signal in the different types of VOP;
 - indicating to the decoding module which of the different types of VOP the decoding module is to decode; and
 - the decoding module accessing a lookup table specifically corresponding to the indicated type of VOP to decode the predetermined signal.
- [c17] 17. The method of claim 16 wherein each of the plurality different types of VOP corresponds to a different lookup table.
- [c18] 18. The method of claim 16 wherein the decoding module comprises a VOP type indicating flag and the method further comprises setting the VOP type indicating flag to indicate which of the different types of VOP the decoding module is to decode.

- [c19] 19. The method of claim 18 wherein the VOP type indicating flag is set by a switching circuit.
- [c20] 20. The method of claim 16 wherein the type of VOP the decoding module is to decode is indicated by a switching circuit transmitting the corresponding lookup table to the decoding module.